SHAPING NATIONAL RESPONSES TO CLIMATE CHANGE

A POST-RIO GUIDE

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Overcoming Obstacles to a Successful Climate Convention

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One key legacy of the mammoth Earth Summit in June 1992 is a framework convention intended to control climate change. Signed by 153 nations following sixteen months of negotiation within the INC, the climate convention will enter into force ninety days after the fiftieth ratification is received. Many environmentally concerned citizens regard the set of principles embodied in this document as essentially meaningless since the agreement lacks any specific commitments or timetables for the reduction of greenhouse gas emissions or any concrete financial commitments from developed countries to enable developing countries to pursue more greenhouse-friendly development strategies. Other advocates are more circumspect about the result, believing it to be the essential, if cautious, first step toward controlling human actions that may lead to damaging climate change. Still others find grounds for optimism in the unprecedented scale of governmental and nongovernmental participation in the Earth Summit and in the white-hot glare of publicity generated worldwide on behalf of environmental issues. Whatever the ultimate verdict, the present climate convention is likely to be followed by years of on-and-off international negotiations over more specific strategies for controlling global warming.

This chapter offers an assessment of the climate talks thus far and asks how best to move them forward. In so doing, it does not seek to evaluate or resolve the considerable scientific and economic uncertainties that surround the global warming issue, nor does it analyze the merits of the many proposed policy responses. In particular, it does not weigh the option of no further international action on the climate issue. Instead, as a reasonable (but contested) assumption for purposes of analysis, this chapter uncritically maintains that the prospect of a serious climate problem exists and adopts the perspective of a greenhouse control advocate who seeks a more stringent type of coordinated international action,
but who is agnostic as to its particular form (for example, targets, carbon taxes, or tradeable permits).

In addressing this question, I implicitly draw on concepts from the emerging prescriptive field of negotiation analysis, an approach with roots in game theory, decision analysis, and social psychology. In particular, the analysis is organized around the concept of building and maintaining a meaningful winning coalition of countries that take concrete measures to curb climate change. In a parliamentary context, a winning coalition is a group sufficient to enact legislation. Here, the term is used in a more subjective and expansive sense, defined with respect to the goal of a particular greenhouse gas control advocate. In particular, a winning coalition consists of a set of countries whose actions to control climate change are sufficient to meet that goal. (Different goals thus imply different winning coalitions; this chapter’s analysis is framed to apply readily to different goals.) To an advocate, the opposite of a winning coalition is a blocking coalition, or a group able to prevent—passively or actively—a winning coalition from emerging and taking effective greenhouse control actions over time.

There is a temptation among some observers to attribute the lack of progress in the INC talks to the United States and, in particular, to the notable opposition of powerful Bush administration figures (such as former Chief of Staff John Sununu, Budget Director Richard Darman, and Chairman of the Council of Economic Advisers Michael Boskin). It follows, therefore, that a more environmentally sensitive and committed Clinton-Gore administration should unblock progress. This chapter argues that such a view, though not incorrect, is too narrow. There is a much broader range of scientific, economic, and ideological barriers to meaningful and sustainable climate agreement. As such, the present analysis first describes these barriers and then concentrates on how potential and actual blocking coalitions can be prevented from forming, can be acceptably accommodated, or can otherwise be neutralized.

Given the prominence and publicity surrounding international conferences, getting stronger and more specific treaty provisions (that is, protocols) negotiated, signed, and ratified by a suitable number of countries may seem like the obvious route to achieve a meaningful winning coalition. Yet, to a greenhouse control advocate, the success of a negotiation should not be measured by paper mandates and signatures affixed, but instead by the tangible results it stimulates, directly or indirectly. These results could, for example, include increased energy efficiency that would not otherwise have occurred, slowed deforestation and new programs of afforestation, and changes from relatively carbon-intensive fuels such as coal to cleaner ones such as natural gas. By analogy, a committed Europhile may have been
thrilled at the sight of heads of state signing the Maastricht treaty, which promises closer monetary, economic, and foreign policy integration among the European Community member states. However, if these leaders prove to have been too far ahead of their national constituents—who, like the Danish people, end up voting against ratification—the negotiated instrument may even set back the cause of European unity. If this scenario unfolds, some advocates may wish that there had been greater efforts at consensus building and a less ambitious treaty that might have proved to be a more solid building block. In short, while an advocate’s natural focus may be on formal negotiations and far-reaching treaties, these should be viewed as the means to an end rather than as ends in themselves.

A greenhouse control advocate faces an analogous fundamental strategic choice. One option would be to devote primary energies to exploring which diplomatic and procedural devices are most likely to achieve a negotiated instrument that directly mandates strict adherence to greenhouse-friendly policies—a kind of global environmental protection agency with powerful enforcement capabilities. Another approach would be to think about how the negotiations themselves can be used indirectly to achieve their goals by acting as instruments to strengthen the broad and deep consensus needed to overcome the formidable obstacles to action. For example, the negotiating process can be regarded less as a device whose sole purpose is to reach formal binding agreements and more as a means of generating publicity, raising awareness, helping to mobilize sympathetic environmental opinion worldwide, forging coalitions across national boundaries, and providing support for broad-based scientific and policy research to resolve troublesome questions about climate change. Deciding which of these approaches, or what combination of them, holds the most long-term promise for crafting a winning climate coalition depends on the nature and extent of the obstacles to be overcome. It is to an examination of those obstacles—and the actual and potential blocking coalitions to which they give rise—that this chapter turns. First, however, it is useful to place the climate negotiations and the barriers they face in a historical perspective.

THE DIFFICULTY OF ATTAINING AGREEMENT TO CONTROL CLIMATE CHANGE

The widely accepted goal for climate change negotiations has been to generate a general framework convention, perhaps together with one or more protocols on specific subjects. A framework convention was indeed
signed in Rio de Janeiro, though specific control protocols were not. Of special disappointment to many greenhouse control advocates worldwide was the virtually single-handed opposition of the United States—among industrialized countries at least—to the adoption of binding targets and timetables for greenhouse gas stabilization in the convention. (Before the 1992 Earth Summit, the nations of the EC and the European Free Trade Association, along with Japan, Australia, Canada, and others, adopted greenhouse gas stabilization or reduction targets.) In part, this step-by-step, framework-protocol approach was a reaction against the years of negotiating the detailed and comprehensive Law of the Sea (LOS) treaty, which, ultimately, was rejected by the United States and opposed by a few other key powers. In part, the current approach to climate negotiations seeks to build on the perceived success of an analogous process that led to widely accepted control measures for CFCs, an ozone-depleting class of chemicals that also plays some role in greenhouse warming. While a large number of other international negotiations have influenced the dominant course of climate change negotiations and contain useful insights, both the LOS and the CFC negotiations concerned global resources (like the atmosphere). They embody valuable lessons in themselves and serve as especially salient examples for many informed observers.

**Negotiations over Ozone and Oceans**

The Third United Nations Convention of the Law of the Sea, launched by the General Assembly in 1970, led in 1982 to a comprehensive treaty signed by 159 states (and other authorized parties) that formally enters into force once the sixty-ninth instrument of ratification is deposited; the required number was reached in 1994. On the positive side, against the predictions of many knowledgeable observers, a broadly acceptable LOS Convention—a "constitution for the oceans"—did result from this mammoth effort despite technical complexity, uncertainty, and ideological division. The negotiation process and the LOS treaty have reduced much of the ocean conflict that was burgeoning at the outset of the negotiations. Given these factors—and the fact that the atmosphere, like the oceans, is a global resource—there were calls from some quarters for a loosely analogous, comprehensive Law of the Atmosphere to address global warming.

By contrast, many view the LOS model as precisely the wrong way to negotiate a convention. The process was conducted at a level of detail that arguably should have been unthinkable in a treaty framework; more...
over, twenty years after its inception, the result barely on the threshold of entering into force. In the views of skeptics, the result of this unwieldy process, especially with respect to deep seabed resources, was unworkable, a dangerous precedent, and counter to Western interests. Just as the United States rejected this flawed treaty, goes this line of argument, so should it reject any analogous process or result on climate change.

In parallel with the later stages of the LOS talks, another relevant set of negotiations got under way. In 1977 the United Nations Environment Programme (UNEP) and other UN agencies drew up an Action Plan to Protect Stratospheric Ozone that strengthened international efforts at research, monitoring, and assessment. Under the auspices of the UNEP, a working group was established in May 1981 to try to come up with a global agreement (a framework convention) to protect the ozone layer from CFCs. After seven rounds of negotiations, the compromise Vienna Convention for the Protection of the Ozone Layer was signed in March 1985 by twenty countries and the EC. The Vienna Convention created a framework for international cooperation on research, monitoring, and exchange of information and provided procedures for developing protocols containing specific control measures. In 1987 twenty-four countries signed the Montreal Protocol on Substances that Deplete the Ozone Layer, which calls for the consumption of most CFCs to be cut by 50 percent by 1999. By mid-1990, over sixty countries had ratified the Montreal Protocol or announced their date of ratification. This list included key developed countries, including the United States, the former Soviet Union, Japan, and the EC countries. However, relatively few developing countries had ratified the Montreal Protocol; holdouts included potentially major CFC producers, such as India, China, and Brazil. In a June 1990 London meeting, following some North-South pyrotechnics, ninety-three nations—including some vocal holdouts from developing countries such as India—signed a much strengthened CFC convention that would virtually ban CFC production and use by the year 2000. The new agreement also promised substantial financial and technical assistance to the developing world.

In direct contrast to the blunt U.S. rejection of the LOS treaty, President Reagan described the 1987 Montreal accord as "the result of an extraordinary process . . . of international diplomacy . . . a monumental achievement." In assessing the relevance of this approach for climate change negotiations, some of those involved with the CFC process—after noting that the complexity of climate issues makes it "impossible to deal with everything at once"—recommended disaggregating the problem and following a step-by-step framework-protocol process modeled after
the CFC experience. Subsequent official action by both developed and
developing countries endorsed the framework-protocol approach.

**Policy Results from Climate Change Negotiations Compared with Those over CFCs or the LOS**

To place the climate change negotiations in perspective, especially with
respect to those over the oceans and the ozone layer, it is important to
understand the nature of the issue. Consider four complementary di-

- In conventional scenarios, slightly less than half of the expected
  warming from emissions during the 1980s, for example, came from
  energy-related activities (coal, petroleum, and natural gas used in in-
dustry, home heating, transportation, etc.). Nonenergy industrial ac-
  tivities delivered about a quarter, and land use activities (deforesta-
tion, rice cultivation, fertilization, etc.) caused the rest.

- About 55 percent of the expected contribution to warming from emis-
  sions during this period is due to carbon dioxide, with CFCs (24
  percent, likely much less depending on the effects of the Montreal Pro-
tocol and of findings that the effective warming contribution of CFCs
  may be small), methane (15 percent), and nitrous oxides delivering
  the rest.

- About half of the expected warming will reflect global population
growth and about half will reflect growth in per capita demand.

- About 40 percent of the expected warming now comes from activities
  in developing countries, a figure that may rise to 60 percent by the
  end of the next century. (These proportions are reversed, of course,
  for the developed world.) Thus, both issues of economic growth for
  industrial countries and development in the Third World will be at
  stake as possible responses to global warming are fashioned.

This examination of the present and future causes of the greenhouse
effect reveals the manifold causes and the range of policies that could
make some difference in the amount or rate of expected warming. No
approach that is narrowly focused on carbon dioxide, for example, or fossil
fuels, conservation, or deforestation can fully solve the problem. More
important, this look at the vast scope of the greenhouse problem unders-
cores just how deeply its causes are embedded in the central aspects of
the world’s economic and social activity: its causes cut across transporta-
tion, industrial, agricultural, and forestry practices; from the developed to
the developing world; and in the very growth of populations and economies. This complexity carries an important implication: although some expected a full solution to the climate change problem to emerge from the negotiations that culminated in the Earth Summit, these talks should be regarded, at best, as a first step in a series of greenhouse negotiations that will likely stretch over decades.

Thus, negotiating and sustaining serious actions to mitigate greenhouse gas emissions will entail real difficulties. While the CFC model has generally been seen as appropriate, the number of significant CFC-producing countries was small. The economic costs, required institutional changes, and affected industries were relatively limited. Those firms that expected to be able to produce CFC substitutes could benefit compared with their competitors and thus could even gain from the treaty. Few of these conditions apply to limits on carbon and other greenhouse emissions. Furthermore, negotiating a broad-scale convention on the apparent causes of global warming will be much more difficult even than the LOS Convention.

A convention of limitation versus a convention of expansion

Much of the LOS accord granted or legitimated a series of previously tenuous new claims to ocean resources by many states. Devising an LOS “convention of expansion” involved the relatively easy problem of how to divide an expanding pie. By contrast, climate change negotiations that will have a real, direct effect must focus on working out conventions of limitation, of shared sacrifice, and of painful transfers and compensation—requiring curtailments in energy use, more expensive development paths for developing nations, changes in agricultural patterns, cessation of currently profitable deforestation, and other such activities. To the extent that climate change negotiations are perceived as allocating sacrifices, they will be fundamentally more difficult than the “happier” LOS problem of allocating new resources. Of course, to the extent that the participants focus on the joint gains relative to feared climate disaster, the process will be so much the easier. Some groups that will directly benefit—such as the vendors of renewable, cleaner, more efficient energy and the technologies that make such energy use possible—may join environmental advocates as vocal proponents of a greenhouse control regime.

A true global commons with damaging incentives

In 1970 the UN General Assembly unanimously declared deep seabed resources such as manganese nodules to be the “common heritage of
mankind,” in fact, this was a statement about property rights to deep seabed resources. By contrast, the global atmosphere is a true commons in the economist’s sense that all greenhouse gas emissions from a single country eventually mix and adversely affect the entire world. True commons resources contain economic disincentives for individual initiatives to curb emissions since the full costs of efforts to mitigate harmful emissions by one state must be borne fully by that state, while the benefits of such actions are diffused throughout the global community. Moreover, any benefits of actions now that would slow the present rate of growth of greenhouse gases would only be felt decades later by the inhabitants of a future world. Thus, facing the full costs of abatement today with the prospect of enjoying only a fraction of any future benefits, individual entities have powerful incentives to continue emitting and to “free ride” any costly actions others might take to mitigate the problem. As such, strong political and economic forces can lead states and private parties to postpone any action absent a broad international agreement.

**THE BASES OF BLOCKING COALITIONS IN GLOBAL WARMING NEGOTIATIONS: SCIENCE, INTEREST, IDEOLOGY, AND OPPORTUNISM**

As presently contemplated, the FCCC—which sets forth an agreed definition of the problem and provisions for joint research, monitoring, coordination, and national reporting—is to be followed by specific protocols detailing restrictions to be placed on various sectors. In such an approach, the choice of which specific protocols to pursue singly, in combination, or in sequence (for example, transportation, energy, and tropical forestry) will heavily determine which interests will arise to oppose action; in choosing one’s issues, one chooses one’s opponents. As elaborated below, this choice of potential opponents—which can be expected to be both private and sovereign, and located both in the developed and the developing worlds—should be a conscious and strategically sophisticated decision. Attention turns naturally enough to opposition that is based on economic self-interest. Yet this is too constricted a view. As the LOS and the CFC experiences attest, scientific disagreement, ideology, and opportunism may also animate blocking coalitions, or nonjoining but opposing entities, that prevent agreement on or implementation of an otherwise desirable treaty.

**BLOCKING COALITIONS BASED ON ECONOMIC INTEREST AND IDEOLOGY: THE CAUTIONARY LOS EXPERIENCE**

It is perhaps sobering to recall how the LOS treaty’s burdens on seabed mining—for all intents and purposes a nonexistent industry segment—
engendered tenacious and ultimately effective opposition for both pragmatic and ideological reasons. Major maritime establishments, especially in the Soviet Union and the United States, were powerfully motivated in the 1960s by the desire to stop “jurisdictional creep.” This phrase refers to the tendency for territorial claims, especially by coastal and island developing countries, to expand and cast an ever-widening net of restrictions on submarine, ship, and aircraft mobility in what had traditionally been the high seas. With the likely acceleration of this powerful trend—to extend territorial sea claims from three miles out to between twelve and two hundred miles seaward—more than one-third of formerly open ocean would have the same sovereign status as the land of states. To navies, this was an intolerable prospect. Thus, the developing world influenced something of high value to the maritime powers.

Emboldened by this genuine maritime interdependence, many developing countries effectively pressed for a seabed regime modeled on the precepts of the New International Economic Order (NIEO), including significant wealth redistribution, greater participation by developing countries in the world economy, and greater Third World control over global institutions and resources. Real developing country leverage meant that the maritime powers could not costlessly reject NIEO demands and just walk away. This perceived vulnerability to the power of the developing countries’ coastal states kept the United States and other maritime powers at the LOS bargaining table for years, but ideological disagreements ultimately spurred the treaty’s rejection.

As the LOS seabed regime took on more of an NIEO-like character, industry opposition grew. The most effective vehicle that industry found to oppose the treaty was less its economic self-interest than the ideological cast of the emerging regime. Elements included the declaration that seabed resources were the common heritage of mankind (seemingly collectivist), seabed production controls (that is, OPEC-like cartels), mandatory technology transfers (negation of intellectual property rights), financial requirements (globally levied taxes), new voting schemes (more like the UN General Assembly), and the creation of international mining enterprises (worse even than state-owned enterprises). A number of these issues—such as developing countries’ demands for technology and resource transfer and demands for new institutions—are similar to those now animating climate change negotiations.

Richard Darman, once the vice chairman of the U.S. LOS delegation and subsequently a senior policy advisor in the Reagan White House and director of the Office of Management and Budget during the Bush administration, contended in an influential *Foreign Affairs* article that
“the most important issues at stake in the deep seabed negotiations, however, are not merely questions of manganese nodule mining. What is fundamentally at stake is a set of precedents with respect to systems of governance.” In particular, he distinguished between the “precedential elements of the seabed regime (as distinguished from seabed mining).” The Reagan administration generally concurred. Seabed mining was only a small part of the LOS treaty, but the blocking coalition of seabed miners and policy skeptics that it engendered in the United States was ultimately successful, prevailing over the defense and environmental interests that were the strongest supporters of the LOS Convention.

U.S. negotiating behavior throughout the deliberations of the INC and into the Earth Summit was likewise animated by a sizeable and parallel ideological component: U.S. negotiators were suspicious of multilateral institutions and proposed measures of a nonmarket nature, were hostile to actions that might seem to kowtow to a demanding Third World, and were negative on perceptions of environmental extremism. Much of this ideological animus was ascribed by environmental advocates to the personality and convictions of Bush administration figures such as John Sununu, Richard Darman, and Dan Quayle, but the concern should be focused on more than a few individuals or a single administration.

Undoubtedly, the ideological tenor of the U.S. participation in further climate negotiations will shift in a Clinton administration from its expression during the Reagan-Bush years, but such considerations will very likely continue to play a significant role in these talks for a very basic reason: as with the LOS Convention or the Montreal Protocol, long-term success is impossible without the cooperation of the developing world. Greenhouse gases in the atmosphere are now mainly attributable to past and present activities of developed nations. However, with projected population and economic growth in the developing world, the source of the greenhouse problem will rapidly shift over time, especially if India and China choose their least-cost development paths that rely on their vast coal resources. China, for example, now plans to expand its coal consumption fivefold by the year 2020, a result that would add nearly 50 percent to current worldwide carbon emissions. Anti-global warming steps agreed and taken by the developed world alone could be heavily offset over time by inaction in the developing countries; by the year 2050, it is projected that global warming without developing country cooperation will be 40 percent higher than with it. Thus, the developed world cannot solve the climate problem in the long run without the cooperation of developing nations.

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Given the energy requirements not to mention the rationale among developed and developing countries of climate change presented by the current technical agenda, one gets the sense that the U.S. will not be able to achieve the official desires for the renewal of the Convention.

The fund of mutual demands in the LOS is still present in the LOS of the pre-Marco protocol. The Earth Summit between the developed and developing world is still ongoing in the Northern hemisphere. Partly effective ac

**BLOCKING THE CFC**

Although the CFC proposals included both the CFC in the United States and the industry plan to deplete Chemical Industry to 1
Given the prevailing levels of distrust—not to mention the steep energy requirements vital to development—a threat by key developing nations not to cooperate with an emerging climate regime could have a clear rationale and a measure of credibility, even if such steps are ultimately mutually destructive and even if their effects might be more severe in the developing world. No wonder that, in the words from a recent discussion of climate change and overall Third World concerns, “the problems presented by climate change also present opportunities to reexamine and correct many of the underlying problems of development that have led to the current dilemma . . . including trade issues, debt, technology transfer, technical assistance, and financial assistance.”

To Southern diplomats who hold this view, the climate change issue may prove to be a very potent bargaining lever, with application well beyond the climate context. According to another observer, “this group sees environment as the same kind of issue in the 1990s that energy was in the 1970s. They hope that the developed countries’ interest in the environment can be used over time to wring concessions on development issues from the North.”

The fundamental conflict of North-South agendas and the reality of mutual dependence have found and will continue to find expression in climate negotiations. The underlying ideological template, also present in the LOS and Montreal negotiations, is that of the NIEO. A great deal of the preparatory negotiations for the 1992 Earth Summit focused on generalized North-South concerns expressed in well-worn NIEO terms; the Earth Summit itself was barely able to find common principles between a highly negative United States and the North-South cold warriors from the developing countries. The risk is that attempted use of real Southern leverage on behalf of NIEO precepts might meet enduring Northern intransigence that is based on antipathy to the underlying ideology. Parties on either or both sides of this divide could block sustained effective action.

BLOCKING COALITIONS BASED ON SCIENCE AND INTEREST: THE CFC NEGOTIATIONS

Although the CFC accords indeed represent important international coordinating steps, they illustrate bases of potential blocking coalitions, including both scientific disagreement and economic interest, complementary to those explored above in the LOS context. Despite periodic intense public concerns over fears that the supersonic transport and aerosols would deplete the ozone layer, the actions of a relatively small number of industry players (Dupont and Allied in the United States and Imperial Chemical Industries and others in Europe, along with policy skeptics in
the major countries) were able to delay action on an ozone convention for a number of years. To understand why, it is critical to focus on internal (domestic) considerations along with considerations in the external (international) negotiating forum.

It is both instructive and sobering to see how CFC industry opposition was overcome by 1987. In part, it was a matter of science. Though predictions of individual scientists varied greatly, consensus estimates of the extent, likelihood, and danger of ozone depletion had declined from the early 1980s prior to the surprise discovery of the Antarctic ozone hole in 1985; thus, industry opposition to regulation during this period had a scientific basis. However, Dupont was publicly committed by statements of company officials to the U.S. Congress to the effect that, if scientific evidence conclusively showed adverse health effects, it would no longer produce CFCs; this declaration was a key factor in Dupont’s “conversion.”

However, two other dynamics may have been at work in overcoming Dupont’s effective blocking actions. First, though it put the work on hold for a time in the early 1980s, Dupont had been intensively engaged in the search for CFC substitutes and appeared to be well ahead of its global competitors in this regard. If this were so, international limits on the amount of CFCs that could be produced and consumed would both permit the price of the allowed production to be raised and place Dupont in a favorable competitive position. Second, as public awareness culminated in tremendous concern about the Antarctic ozone hole, prospects grew substantially for U.S. legislation that would have unilaterally restricted CFC production and use. From Dupont’s point of view, while no regulation would have been the preferred alternative, international rules that constrained the entire global industry were far preferable to a U.S. law that singled out domestic companies. Thus, the unusual confluence of several distinct factors—scientific evidence coupled with prior public statements by the company, competitive dynamics within the industry driven by CFC substitutes, and the threat of domestic legislation—were sufficient to turn Dupont around and open a split in the ranks of global industry.

**Extent of Likely Blocking Coalitions in Anti-Greenhouse Gas Negotiations**

These LOS and CFC accounts illustrate how potent greenhouse treaty opponents may be on scientific, economic, and ideological bases. After all, the LOS treaty was scuppered in the United States and in other important industrial nations by the economic and ideological concerns of an industry segment (seabed mining) that did not even exist. With respect to the
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ozone experience, the 1990 Economic Report of the President estimated the U.S. costs of compliance with the Montreal accord at $2.7 billion—one measure, since reduced, of the costs motivating skeptical policymakers and corporate opponents of the treaty. Despite public concern over the ozone layer, the Montreal treaty was effectively delayed for several years by these groups until the scientific consensus shifted.

Although $2.7 billion is certainly a high cost, the same report cited the U.S. costs of a 20-percent cut in carbon dioxide at between $800 billion and $3.6 trillion. If these figures are even remotely accurate, they suggest that those concerned about the prospect of large-scale greenhouse control (for example, policy skeptics, coal and oil companies, and auto makers) would have an economic motivation for opposition, regardless of the level of environmental benefits, literally hundreds of times stronger than that of the CFC industry. The battle throughout the 1980s over amendments to the Clean Air Act, with annual costs in the comparatively mere $25–35 billion range, gives another sobering point of comparison. Cost estimates of the magnitudes mentioned above are by no means universally accepted; respectable analyses suggest that some reductions may be achieved at low or even negative cost. However, it is the credible prospect of burdensome costs that will engender opposition, especially among risk-averse firms that fear they will bear the costs. Furthermore, since the benefits are uncertain, diffuse, and will mainly accrue to future generations, today's opponents are likely to speak with the clearest voices.

Indeed, the powerful coalitions that will arise to resist major greenhouse action are currently fairly quiet (although coal and oil producers have certainly made their views known). They will certainly awaken to the extent that the prospect of such action becomes more likely and that the feared costs are large. Look, for example, to Canada, a country in the rhetorical vanguard of greenhouse concern. If serious actions are proposed, however, will the Canada that pumps oil, cuts forests, and builds cars really just go along? And are those Brazilians who profit from burning rain forests today readily going to buy arguments about future world benefits? More broadly, blocking coalitions are just as likely to arise in Southern countries, whose development could be impeded by anti–greenhouse gas measures, as in the developed countries, whose industries and consumers could face heavy costs. Oil producing states have, of course, lined up in powerful coalitions against a climate deal. Likewise, the imperative for Eastern Europe to grow to consolidate its political gains will weigh against major greenhouse action. Such coalitions will likely be composed not only of traditional nation-states but also of domestic
interest groups and transnational alliances. In short, the potentially huge costs that are feared to result from significant anti-greenhouse gas policies offer one measure of the economic motivation for opposition to action and a partial guide to the strength of likely blocking coalitions.

This implication has particular force with respect to the negotiation of national targets, or reductions from given emissions levels that would collectively be within an overall world reduction target. Emissions targets and timetables have been the dominant theme in international discussions over a greenhouse control regime; environmental advocates and media observers have generally judged the seriousness of national governments by their willingness to endorse binding targets and timetables and therefore judged the Brazil framework convention a failure because of its absence of binding commitments. In particular, given the high level of public concern about the greenhouse issue, many environmental advocates expected quick negotiations and decisive agreement on targets. The significant number of industrial countries that unilaterally or in small groups had committed by early 1992 to greenhouse gas stabilization or reduction targets was in line with this optimistic view (although there is a long road between target and result). Yet U.S. (and OPEC) opposition to an overall target (that is, limiting greenhouse emissions in the year 2000 to 1990 levels) effectively kept targets out of the climate change agreement that was signed at the Earth Summit, although the United States later agreed to a greenhouse target.

U.S. opposition to targets may appear anomalous, especially given that all other OECD countries except Turkey had agreed to stabilization by mid-1992 (and the United States had concurred by mid-1993). Yet as the effects of targets become more specific and stringent, more resistance will grow from those affected. This correlation implies that negotiating meaningful anti-greenhouse action is likely to take considerable time. The above analysis spells out the extent to which climate change negotiations could seriously impinge on a range of vital activities—far more than the twelve-year LOS process. The much simpler CFC negotiation process, from which specific country obligations emerged, took over five years from the start of negotiations and over ten years from the announcement of the UNEP’s 1977 Action Plan to Protect the Ozone Layer. Similarly, the twelve-nation EC Large Combustion Plant Directive to limit acid rain took five years of negotiations, often twice-weekly and among a relatively homogeneous group, to agree on targets.

More recently, and ominously, although the EC as a whole agreed to stabilize its overall greenhouse gas emissions at 1990 levels by the year 2000, its internal negotiations over which nations would be required to
make what reductions utterly broke down. This failure should be especially sobering to proponents of targets given the EC's high level of greenhouse concern and its relative homogeneity (especially compared with the broader UN membership that is charged with negotiating the protocol phase of a global climate treaty). With this failure to negotiate country-specific targets, EC attention then shifted to imposing a carbon-related tax. As this alternative was being developed, the *Economist* observed that "the proposed carbon tax has been subject to some of the most ferocious lobbying ever seen in Brussels."\(^{21}\) Carlo Ripa di Meana, then the EC environment commissioner, charged that the EC faced "a violent assault from industrial lobbies and the [oil-producing] Gulf countries, which even threatened to break off diplomatic relations" following the announcement of the energy tax.\(^{22}\) Largely as a result of industry opposition, both energy-intensive industries and major importers were preemptively exempted from the tax before the carbon tax was even proposed as a directive to the Council of Ministers. Furthermore, rather than apply the tax unconditionally as a means of reducing EC carbon emissions as environmental advocates had urged, the tax was made conditional on comparable action by the EC's main trading partners. Similarly, before the Earth Summit and amid some fanfare, Japan accepted targets to cut its carbon dioxide emissions to 1990 levels by the year 2000 and to eliminate ozone-depleting substances. Yet by June 1993, a different picture was emerging. By that time, legislation designed to discourage industries from generating large amounts of greenhouse gases had been watered down in response to strong opposition from business leaders and the Ministry of International Trade and Industry. In particular, legislation would not require environmental impact assessments, penalties, or taxes to discourage polluters.\(^{23}\) These episodes stand as testament to the power of potential blockers in the realm of climate negotiations and should be far more worrisome than the image of a powerful individual single-handedly preventing climate action.

At first, the acceptance of stabilization targets by all of the OECD countries except for Turkey and the United States might seem to contradict the above analysis, which points out the extent and power of potential blocking coalitions. However, another interpretation is possible: as illustrated by the EC experience, targets may be relatively easy to adopt but difficult to implement. One might even draw the analogy to the Gramm-Rudman antideficit law, which eerily resembles a climate framework convention in that it contained targets and timetables but left specific agreement on cuts and tax increases for later. As such, this law served for years at a time of intense public concern about the deficit, as an expedient political solution
that allowed executive and legislative officials to declare the deficit problem solved and to return to budgetary chicanery. Similarly, following the second oil shock in 1979, member nations of the International Energy Association agreed on targets and timetables for dramatically reducing their oil imports from OPEC; the results are hard to discern today. It is quite possible that the significant number of unilaterally adopted greenhouse gas control targets or a very weak framework convention that was politically touted as the solution to global warming could have analogous effects. In short, the more clearly identified the objects of anti-greenhouse gas measures—such as targets or carbon-related taxes—the greater the likely opposition from those parties and the more likely that, if adopted, the measures will not be implemented without a far broader and deeper scientific and public consensus on the problem.

In summary, although economic reasons are most often cited as the basis for opposition to greenhouse action, this is too narrow a view; scientific disagreement, ideological clash, and opportunistic use of apparent bargaining leverage are also likely to play roles. In principle, each type of blocking coalition might be dealt with according to its basis; in practice, the bases are likely to be intertwined. (The elements cited above are not the only bases for opposition; for example, conflicting values or different attitudes toward risk or the passage of time may engender opposition.) The seabed mining industry appealed to economic interest and ideology in opposing the LOS treaty; science and self-interest played complementary roles in delaying a CFC accord; ideological clash and opportunism may well combine in further global climate talks. Opposition that is really based on one set of reasons will often masquerade behind another, perhaps more politically palatable, one.

OVERCOMING BLOCKING COALITIONS THROUGH CLIMATE NEGOTIATIONS

In light of this exploration of potential blockers, I return to the basic choice posed at the beginning of this chapter. One option would be for negotiators to focus their energies directly on achieving binding restrictions on greenhouse-unfriendly policies—a frontal attack, so to speak, on the forces that thwarted universal adoption of targets and timetables in the last session of the INC. In particular, the goal would be to tighten the framework convention with new negotiations over specific restrictive protocols. Another option would emphasize a more indirect route, using the negotiating process itself and the agreements reached as instruments for nurturing a far more broad-based and deeper consensus among scientists,
policymakers, and the public on the need for gaining control of greenhouse gas emissions.

Of course, these options are not mutually exclusive, but the latter approach is more suited to a view that considers the scale of the climate change problem as unprecedented and that regards the role of the negotiations themselves and any agreements they produce as important but only partial responses to the problem. In this interpretation, any solution to the problem of global warming will involve the accumulation of many disparate influences operating at international, national, regional, and local levels. The task of negotiators will be to ensure that the negotiating process and any agreements reached will enhance public discussion and education about climate issues, mobilize decentralized responses, especially among NGOs, as well as support and stimulate worldwide scientific involvement in the search for a deeper understanding of the phenomenon and the nature of effective responses.

**Recommendation:** Design the negotiating process to enhance and tap the vast potential of actions short of internationally agreed emissions limits or specific greenhouse gas control regimes

Instead of immediately seeking a traditional control regime, other approaches can partly sidestep and prevent the problems of blocking coalitions as well as some of the time lags and sovereignty difficulties characteristic of formal protocol negotiation, ratification, and implementation. For example, former UNEP Deputy Executive Director Peter Thacher has argued against the conventional wisdom of waiting for a negotiated framework convention as a first step that is to be followed by specific negotiated protocols. Instead, in line with experience of the Mediterranean and Ozone Action Plans, he suggested that as many countries as are now willing should first agree on a greenhouse action plan that contains no formal obligations, but that offers the willing sponsors a vehicle within which to promptly commence valuable research, monitoring, and assessment programs as well as to offer developing countries needed assistance to participate in technical and negotiating forums. Such voluntary actions would support and may well speed up the protocol negotiations.

A slightly “harder” option has been suggested by Abram Chayes in an analogy to the launching of the IMF. By creating a post–World War II transition period during which treaty members could simply maintain various forbidden restrictions until they voluntarily relinquished them, the necessary institutional apparatus was developed, professional staffs and reporting practices established, and momentum built toward a result that
was ultimately widely accepted. Applied to the greenhouse case, this scenario would permit further collection of detailed statistical series on global emissions, facilitate technical assistance to environmental agencies (especially in the developing world), permit the development and empirical validation of more specific performance criteria, and help develop a technically competent and credible monitoring and compliance capability.

Peter Haas and Emmanuel Adler recently edited and contributed to an issue of *International Organization* (winter 1992) that contained numerous case studies of the formation of so-called epistemic communities, or transnational coalitions of experts reasonably close to the decision processes in various countries who share common views of a problem and who come to exercise great influence on the international response. One view is that a very useful function for subsequent climate negotiations would be to foster the development of an increasingly self-conscious epistemic community around issues of climate science. At present, there is consensus on much of the basic science of the greenhouse problem, but the critical issues of timing, magnitude, and distribution still are unresolved. The two key ingredients that might be provided by upcoming negotiations are resources, especially to enable the sustained participation of scientists from developing countries, and a public spotlight.

Absent a natural climate catastrophe, it is unlikely that future climate negotiations will have anything like the public salience of the Earth Summit, which brought together more than 150 nations, 1,400 NGOs, and 8,000 journalists. Nevertheless, future talks should explicitly seek to build on this widespread public exposure. Given the potential of global communications technologies and the efforts of concerned governments and interested NGOs, future climate negotiations themselves and the public awareness they stimulate can help to spur informal control regimes, in part by building on and influencing domestic opinion, which is often led by the actions of NGOs. (The most striking example of this phenomenon probably occurs in the area of human rights.) The national reporting requirements contained in the current climate convention—if beefed up and properly funded—provide a natural vehicle for involving and mobilizing citizens and advocates. In turn, stronger informal regimes may come to be embodied in more potent formal instruments that might earlier have been blocked by opposing coalitions.

Arguably, enough countries and environmental organizations are already sufficiently supportive of greenhouse gas control actions that they should not have to wait for the conclusion of protocol negotiations to take meaningful action. In effect, the climate convention signed at the 1992 Earth Summit, which contained no binding greenhouse gas reduction requirements for signatory nations, adopted a version of the approach sketched at later protocol negotiations.

A second protocol negotiations prospects of the science extension into the political coalition.

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**Recommend unifying coalitions.** A good way to handle all of the box package to
sketched above and postponed negotiations over actual restrictions to a later protocol stage. A negotiating process and outcome that did not build on the framework now in place would be publicly invisible and exclusive. A negotiating process and outcome that did build on the framework would be designed for public visibility and inclusiveness as well as for an extension of the scientific consensus on the problem both to new areas of the science and to a broader range of scientists worldwide. In short, if successful, the negotiating process would aim to channel resources and energy into activities that would broaden and deepen the scientific and political coalition in favor of substantial anti-greenhouse gas action.

A second group of recommendations returns to the conventional protocol negotiating process and offers a number of ways of enhancing the prospects for success.

Recommendation: Choose the subject and nature of later protocols with great care

The choice of protocols and the negotiating relationship that is envisioned among them is of central importance; after all, with the choice of a protocol comes a set of opponents (as well as supporters). Protocols have been suggested, in some cases without much explicit analysis of their implications for negotiating success, on a virtually endless number of potential subjects: targets for reducing national greenhouse gas or carbon emissions, credits for providing carbon sinks, automotive transportation, industrial energy use, tropical forestry, agricultural practices, sea level rise, technology transfer, international funds to aid developing countries, a carbon tax, tradeable emissions permits, methane, and so forth.

While it is beyond the scope of this chapter to develop and justify a specific agenda for this process, the choice of protocols should maximize the substantive desirability and the potential of the chosen issue to contribute joint gains to a broad-based group of adherent countries while reducing the likely opposing interests that will be stimulated. Following substantive value, a prime consideration in the choice of protocols should be a clear-eyed view of the likely opposition. Is a proposed target concentrated or diffuse? Is it politically influential in key countries or not? Are the necessary changes inexpensive or very costly?

Recommendation: Minimize the risk of energizing and unifying disparate interests into a large blocking coalition

A good way to guarantee an endless negotiating impasse would be to handle all of the above-mentioned protocols in a Law of the Atmosphere package to be agreed by consensus. Comprehensive anti-greenhouse gas
efforts that affect a number of potentially powerful interests risk energizing and unifying otherwise independent, blocking forces. A protocol that, for example, explicitly targeted oil companies, coal-mining interests, or automobile manufacturing firms, as well as various agricultural concerns—let alone the full range of human activities that result in greenhouse gases—would almost certainly take a very long time to negotiate and might never surmount the solid wall of opposition it could raise.26

In the greenhouse case, a wise course of action may be to proceed sequentially with protocols to avoid the creation of a potent unified opposing coalition. Not entirely tongue in cheek, it may be best to pick “easy” subjects first to generate momentum—protocols directed at greenhouse contributors that are politically weak, morally suspect, and concentrated in highly “green” countries—with later protocols strategically chosen to build on early successes.

A widely discussed greenhouse control regime involves the allocation of a number of tradeable emissions permits, such that the overall level of greenhouse gas emissions could be limited. Beyond the initial allocation, the ultimate distribution of the permits would not have to be negotiated or bureaucratically determined since these permits could be bought and sold. In theory at least, the permits would end up in the hands of those entities that could reduce emissions most efficiently. An ongoing question with respect to a tradeable permits regime is whether it should only cover carbon dioxide emissions or whether it should extend to other greenhouse gases, such as methane and nitrous oxides, in order that the overall least-cost control actions be chosen. A full answer to this question depends on issues such as source identifiability, monitorability, and negotiating complexity. From the standpoint of blocking coalitions, however, it is clear that seeking to negotiate a more comprehensive regime would also risk unifying a much wider set of disparate, opposing interests. Analogous reasoning applies to other proposed anti-greenhouse gas regimes such as outright emissions limits and various forms of carbon taxes.

**Recommendation: Exploit the Potential of Incremental Approaches**

Beyond measures to prevent the formation of blocking coalitions in the first place, a number of other approaches can be characterized as incremental. The idea behind them is to gain agreement on a relatively weak or nonspecific treaty or plan of action in the expectation that, over time, it will progressively be strengthened. This approach may be a conscious initial choice or it may simply reflect the strength of opposing forces in the early negotiations. Advocates may settle for what they can get in the hope that they line up with other approaches that would...

The final best of all treaties wait to mitigate different all country as a prude international potential.

One advantage of having a treaty that can’t be renegotiated or extended is that the parties can be committed to the process from the start. With such a treaty, the parties can be assured that the process will continue even if other negotiations fail. This can help to build momentum and encourage further negotiations. The treaty can also provide a framework for further negotiations, making it easier to reach agreement on more comprehensive measures in the future.
that they have set the stage for another round that will conclude more in line with their preferences. This section considers two incremental approaches in rough order of the specificity and weight of the commitments that would be undertaken.

The first incremental approach involves a "baseline protocol." In the best of circumstances, a great deal of valuable time may be lost as countries wait until the international process concludes before taking actions to mitigate greenhouse problems. Some domestic opponents of action in different countries will cynically argue for delaying domestic action until all countries have agreed on reductions. Others will merely regard delay as a prudent bargaining technique to hold off any unilateral action until an international accord is reached. Either way, their blocking (and delaying) potential can be damaging.

One approach to this problem would be the early negotiation of a protocol specifying an early baseline date—perhaps a date in the past—after which anti-greenhouse gas measures taken by individual countries would be credited against the requirements of a later international agreement. With such a date agreed, states could promptly undertake unilateral or small-group initiatives to reduce greenhouse gas emissions in the confidence that these measures would count toward the reductions required by an ultimate regime. Such a baseline-year agreement, perhaps negotiated as a protocol, could help to neutralize a major argument of domestic opponents of anti-greenhouse gas measures who hold that action without an overall international agreement is either unwarranted or foolish.

Given the likely time required for an overall agreement embracing substantive anti-greenhouse gas measures such as binding targets and timetables, a preliminary baseline protocol of this sort should prove far easier to negotiate quickly. Incidentally, such a baseline protocol need only assure states that their actions subsequent to the agreed baseline year would count; the question of the status of actions taken prior to the agreed date could be explicitly left for future negotiation. (A rough U.S. analogue to this approach is contained in the 1992 energy strategy bill that permits companies' anti-greenhouse gas measures to count against future regulatory requirements.)

The second incremental approach involves ratchet mechanisms. Suppose that greenhouse gas reduction targets were set at extremely modest levels in an initial protocol. Likewise, imagine that an international tax on carbon emissions were initially set at a very low rate—for example, to collect resources for an international environmental fund. Given its low rate, this tax (or set of reduction targets) might not trigger concentrated opposition. Later, with the monitoring and collection structures...
in place, the tax rate (or targets) might be ratcheted up if the state of the science merited it and if broad-based support for such a move existed.

Indeed, a review of the history of the ozone negotiations suggests the potential value of such a ratcheting device. When an agreement to set CFC limits proved unreachable in 1985, the United States and others pressed for the Vienna Convention that collectively legitimated the problem, set in motion joint efforts at monitoring, coordination, and data exchange, and envisioned the later negotiation of more specific protocols. In 1987, after scientific consensus on the problem had solidified and industry opposition was largely neutralized, the Montreal Protocol embodied an agreement to cut CFC production and use 50 percent by the year 2000. Many environmental activists harshly criticized these agreed targets as inadequate.

However, the institutional arrangements set up by the Montreal Protocol included provisions to facilitate a review of the agreed limits in the face of new evidence (or, effectively, with shifts in public opinion). In effect, these provisions functioned as a ratchet, whereby later findings such as the direct link between CFCs and the ozone hole would stimulate treaty parties to tighten the limits over the 50-percent base. As the UNEP’s Mustafa Tolba recently put it, “By aiming in 1987 for what we could get the nations to sign . . . we acquired a flexible instrument for action. If we had reached too far at Montreal, we would almost certainly have come away empty-handed. . . . [The] protocol that seemed modest to some . . . is proving to be quite a radical instrument.” This assessment was borne out by the 1990 London negotiations that converted a 50-percent reduction into a virtual CFC ban. This model of settling for relatively modest restrictions on which early agreement can be reached, together with arrangements that facilitate reconsideration, may well be emulated in the climate context.

There is, however, a danger to partial agreements, as exemplified by the 1963 Partial Test Ban Treaty. A number of observers have criticized these accords as stopping too soon and wasting the intense public pressure for change, when, arguably, a comprehensive test ban treaty was then attainable. By negotiators’ addressing concerns about strontium 90 from atmospheric testing in the food chain (in mothers’ milk in particular), this argument goes, the broader dangers of nuclear testing were not addressed and a valuable opportunity was squandered. Rather than acting as a stepping stone to a larger accord, the Partial Test Ban Treaty became a stopping place. (Recall also the analogy to the U.S. Gramm-Rudman anti-deficit law that was drawn above.)
With respect to climate change negotiations in particular, it is quite likely that public concern will be cyclic, in part as a result of natural climate variability as well as unrelated environmental events (such as medical waste on beaches and the Exxon Valdez oil spill). Arguably, a naturally occurring period of climate calm, including milder summers and normal rainfall, will lead to reduced public concern and pressure for action. Moreover, scientific understanding will change over time. These prospects argue for more limited agreements, with analogues to the ratchet mechanism in the Montreal Protocol, if and when more stringent action appears warranted. Such agreements could constitute a “rolling process of intermediate or self-adjusting agreements that respond quickly to growing scientific understanding.” 30 In addition, an even more fundamentally adaptive institution might be envisioned that better matched the rapidly changing science and politics of this set of issues.

**Recommendation: Be cautiously open to linkages among issues (and/or specific protocols)**

In the face of substantial challenges, a successful accord on climate change calls for a process designed to achieve results that can be sustained over time and modified as appropriate. In particular, a process like the ones that took place in Vienna and Montreal, with independent protocols to be negotiated on a step-by-step basis, was thought to have the advantage of speed and relative simplicity over a comprehensive LOS-like approach. This raises the more general question of how to deal with greenhouse issues (or protocols): singly, comprehensively, or in intermediate-sized linked packages. The answer, most useful explored in the LOS context, has a direct implication for ensuring enough gains in an agreement to attract a winning coalition.

Many factors contributed to the lengthy LOS process, but four procedural cornerstones virtually guaranteed its duration and, if these procedures are adopted, could easily do the same to global warming negotiations. These factors include (1) almost universal participation, combined with (2) a powerful set of rules and understandings aimed at making all decisions by consensus if at all possible, (3) a comprehensive agenda, plus (4) the agreement to seek a single convention that would constitute a package deal. 31 The rationale for each of these components was understandable; however, in a climate context a universally inclusive process with respect both to issues and participants, together with the requirements of consensus on an overall package deal, would be very time-consuming, thus holding the ultimate results hostage to the most reluctant party on the most difficult issue. In practice, the LOS conference was less constrained by absolute adherence to these procedural
choices, but the powerful bias that made the process move at a snail’s pace was very real.

Reacting against the LOS approach (that is, a comprehensive agenda with the requirement of a package deal), climate change negotiators aimed for a framework convention to be followed by specific protocols. In line with the CFC experience, this approach retained the aims of universality and consensus, but dropped comprehensiveness and the goal of a package deal in favor of single, separable protocols on limited subjects. This alternative has attractive negotiating features, but it is worth noting that it was the failure of precisely this approach—negotiation of separate miniconventions, which are analogous to protocols—in earlier LOS conferences (in 1958 and 1960) that indirectly led back to the comprehensive package approach of the 1973 LOS conference.

The Problem of Selective Adherence

The LOS experiences in 1958 and 1960 suggest that sometimes issues must be linked. By 1958, for the First UN LOS Conference, the International Law Commission had suggested a negotiating structure with four separate conventions concerning different issues, such as the breadth of the territorial sea and the extent of the continental margin. With respect to the comprehensive agenda of the 1973 LOS talks, Conference President Tommy Koh observed that

A disadvantage of adopting several conventions is that states will choose to adhere only to those which seem advantageous and not to others, leaving the door open to disagreement and confrontations. The rationale for this [comprehensive] approach was to avoid the situation that resulted from the 1958 conference which concluded four [separate] conventions. 32

Such an uneven pattern might also result from a framework-protocol structure on climate change. Imagine Libya signing a forestry convention while Nepal agreed to a transportation and automotive protocol. For individual countries or groups of similar ones, a single issue often represents either a clear gain or a clear loss. As with the early LOS conferences (with independent miniconventions), countries sign the gainers and shun the losers. In a climate context, for example, China may resist a specific fossil fuel protocol that would place restrictions on the development of its extensive coal resources.
2 Overcoming Obstacles

Linkage for Joint Gains and Breaking Single-Issue Impasses

Such single-issue protocols may prove nonnegotiable unless they can be combined with agreements on other issues that offset the losses, or that at least seem to distribute them fairly. A package deal may offer the possibility of trading across issues for joint gain, thus breaking impasses resulting from treating issues separately.

For example, following the 1958 and 1960 LOS experiences, two separate negotiations were attempted; until linked, each proved fruitless. With deep seabed resources considered the common heritage of mankind, the Seabeds Committee undertook a negotiation over the regime for seabed mining. The developing countries wanted this convention to offer meaningful participation in deep seabed mining and the sharing of its benefits. However, the developed countries—whose companies potentially had the technology, the capital, and the managerial capacity to mine the seabed—saw no reason to be forthcoming, and these negotiations were inconclusive. At about the same time, strenuous efforts by the United States, the Soviet Union, and other maritime powers, who were greatly concerned about increasing numbers of claims by coastal, strait, island, and archipelagic states to territory in the oceans, sought to organize a set of negotiations that would halt such creeping jurisdiction. In effect, the maritime powers were asking coastal states, without compensation, to cease a valuable activity (that is, claiming additional ocean territory). Not surprisingly, these discussions over limits on seaward territorial expansion in the ocean yielded scant results.

Seen as separate protocols, these two issues, taken independently, were not susceptible to agreement. Ultimately, however, the linkage in bargaining of these two issues, navigation and nodules—together with concerns over the living resources and outer continental shelf hydrocarbons—came to be at the heart of the comprehensive LOS negotiations. With respect to climate change negotiations, it is easy to imagine that separate protocols calling on different groups to undertake painful and costly measures will similarly be rejected unless they can be packaged in ways that offer sufficient joint gains to key players. Since any action on climate change will largely involve shared and parallel sacrifice, it is probably only by a linkage of issues such as technological assistance and various forms of financial or in-kind compensation that many developing countries will be induced into joining. As such, one should expect great pressure toward combining issues that might initially be conceived as separate protocols for purposes of negotiation.
Certain classes of issues, of course, have been inextricably linked in the negotiations so far. In particular, the question of how greenhouse gas control measures among the other items in the Earth Summit’s agenda are to be financed was the subject of furious negotiation in the INC and at the Earth Summit. While no specific commitments were made by the North, the prospect of substantial resources being funneled through the World Bank proved to be critical in moving the negotiations forward. Almost independent of how the Global Environmental Facility negotiations proceed, donor country support for an additional “earth increment” to World Bank financing resources (the “tenth replenishment” of the International Development Association) will be seen as critical. Such linkages, perhaps external to the actual climate negotiations, need special attention.

Just as in the LOS experience, mutually beneficial manageable packages of protocols under a framework climate convention might be cautiously extended to other environmental issues that arose in the context of the 1992 Earth Summit. This action might have the effect of bringing on board potential blocking coalitions from the developing world. For example, desertification and soil erosion issues may be more pressing to key developing countries than questions of greenhouse emissions. Many developed countries that are unwilling to offer “bribes” to induce the participation of developing countries may nonetheless be genuinely concerned about and more willing to be forthcoming on these regional issues in the context of a larger agreement that promised global climate benefits. Similarly, more expansive versions of so-called debt-for-nature swaps may be explored. One of the most potent long-term steps that could be taken by developing countries to combat global warming (as well as a host of other environmental issues) would be significantly stepped-up population control programs. Unlike, say, energy-use restrictions, this course of action has the virtue of helping rather than hindering economic development objectives. For cash-strapped developing countries, relatively modest aid from developed countries in this area could considerably enhance domestic population control efforts.

Given this analysis, a central problem in the design of future greenhouse negotiations would seem to be finding a constructive path between the Scylla of a comprehensive package agenda that risks LOS-like complexity and the Charybdis of independent, single-issue protocols that may lack sufficient joint gain and thus risk selective adherence. Rather than trying to predict the appropriate linkages, the conference should be designed in such a way as to facilitate linkages as they become evident and necessary. It is generally preferable for negotiators to deal with issues on their separate substantive merits as much as possible yet be alert to po-
tential linkages in order to break impasses. This scenario suggests a conference design with independent working or negotiating groups with a higher level body that seeks to integrate issues across groups and facilitate valuable, but limited, trades.

However, issues should be linked with caution. It can be extraordinarily difficult to unpack these them once they have been combined for bargaining purposes. For example, the United States was generally in favor of the navigational portions of the LOS treaty but had problems with the concessions demanded on a seabed regime. It exerted strenuous efforts at unlinking or separating these topics into manageable packages, but to no avail. The package deal was too strong in the minds of many delegates, and ultimately, the LOS Convention contained both elements.

**Recommendation: Take active steps to avoid triggering a hopeless North-South impasse**

As discussed above, there is an acute risk that a larger North-South agenda—some of it only loosely related to climate change and much of it highly contentious—will occupy center stage in greenhouse negotiations over time. Indeed, these talks have already been characterized by aggressive demands by developing countries for technology transfer and large resource commitments from the industrial world. It is clear that finance and technology transfers, for example, constitute legitimate interests, but the extent to which developed countries will be forthcoming on them in the context of future climate change negotiations is far less clear—especially given ideological reservations about what could be seen as resurgent demands for a discredited NIEO. Moreover, despite the keen concern in many nations about climate change, the greenhouse problem is speculative, contested, far in the future, and very costly to address merely on its own terms, that is, absent additional resources to mitigate generalized problems of developing countries. The uncertain prospect of global warming may not be a strong enough hook on which to hang a larger North-South agenda. The spectre of a North speaking “environments” and a South speaking “developmentse,” with each side talking past the other, is all too real.

With the crumbling of socialist ideology in Eastern Europe and the Soviet Union, many Europeans are also becoming less receptive to formerly attractive NIEO precepts. Thus, if the language negotiated as part of a climate change convention invokes images such as central command, heavy-handed international bureaucracy, forcible technology transfer, blame-casting ideological declarations, guilt-based wealth transfers, and the like, the results of any such negotiation run substantial risk of being
overturned. Indeed Northern opponents of a climate change convention, especially those in the United States, may well base their negative stand on the actual or supposed adverse ideological cast of the regime.

Like LOS, therefore, real mutual interdependence means that climate change talks have the ingredients for an inescapable, long-term, North-South engagement: Southern insistence on NIEO-like measures that would meet with Northern resistance. Given that Southern commitment to the NIEO per se has moderated considerably since the 1970s, the risk of an ideologically driven impasse is probably manageable with some conscious effort. Both the INC and the Earth Summit itself offer grounds for optimism, although the issue may only be in temporary remission. As will be discussed below, creative steps are essential to meet the legitimate interests of developing countries while reducing the risks that such an engagement would result in endless delay and damaging ideological confrontation, with no action to address the greenhouse problem or development imperatives.

RECOMMENDATION: AN INFORMATION NEGOTIATING PROCESS TO PARALLEL THE FORMAL ONE.

A number of well-publicized regional workshops in advance of the negotiations—presented by regional scientists and policy figures that focused on possible impacts—could help spread the conviction that global warming is a common threat from a shared problem. Joint research and study between developing and developed countries should likewise be encouraged, perhaps building on the work of the IPCC jointly sponsored by the UNEP and the World Meteorological Organization.

During the negotiations themselves, similar informal educational events could be helpful. One extraordinary element of the LOS experience, which has been detailed by outside observers, consisted of the influence of a computer model of deep ocean mining developed at the Massachusetts Institute for Technology. This model came to be widely accepted in the face of the great uncertainty felt by the delegates about the engineering and economic aspects of deep seabed mining. A critical point in the negotiations occurred during a Saturday morning workshop—held outside UN premises under the auspices of Quaker and Methodist NGOs—in which delegates from developed and developing countries were able to meet and extensively query the MIT team that had built the model. Indeed, over time, the delegates came to make frequent use of the model for learning, mutual education, invention of new options, and even as a political excuse to move from frozen positions.36
Similarly, a series of informal, off-the-record workshops, where diplomats and politically active participants in the negotiation gathered, aided the Montreal Protocol process. These events greatly increased mutual understanding, improved relationships, and contributed to a successful treaty. Despite its potential abuse by advocates, outside scientific information—when it is seen to be objective and is accessible to the participants—can help move a complex negotiation, even one that is highly politicized and ideologically controversial, in the direction of mutual cooperation. (Of course, improved science might instead clarify winners and losers, thus polarizing the issue.)

As a broader proposition, negotiations that take place entirely through formal diplomatic means have a diminished prospect of success relative to those that encourage informal interactions, the buildup of trust, and the enhancement of personal relationships. Such a parallel, informal process can be hosted by any number of sympathetic participants and observers, from delegations themselves to NGOs of all sorts. A wise secretariat will seek to provide occasions and venues for such events to flourish.

**Recommendation: An enhanced role for Advisory Groups and the Formation of Cross-Cutting Coalitions**

Given the actual and feared adverse impacts of the measures under discussion, conference leadership would be wise to continue to make extensive use of broadly constituted advisory groups, composed of business and other multinational interests, in order to understand concerns, anticipate emerging problems, correct misapprehensions, and communicate about the issues and the evolving negotiating responses. Not only could the two-way communication be useful in such settings, but cross-cutting coalitions might form. For example, industries that could gain from substantial anti-greenhouse gas actions in the developing world (for example, by supplying critical technology for energy efficiency) might make common cause with key developing countries and green advocacy organizations in arguing the case for more developed country assistance for this purpose. The potential value of the Commission on Sustainable Development and the Business Council for Sustainable Development is very high indeed.

**Recommendation: Elaboration and Diffusion of a New Ideological Template**

The North-South conflict has been a staple of recent global negotiations beyond UNCED—from the UN Conference on Trade and Development to debt and codes of conduct for transnational corporations—although the
overt NIEO focus has moderated in the years between the LOS and the Montreal talks. Joint development of a new ideological template within which the climate question could be negotiated offers another means to escape impasse. Such a new conception could avoid lumping countries with vastly different climate interests—from coal-rich developing countries such as China and India to sub-Saharan Africa to the Second World of Central Europe to Norway and the United States—into catchall categories such as North and South. The most promising candidates to date are the principles of sustainable development, which was articulated by the Brundtland Commission in *Our Common Future* and elaborated in the discussion of the Earth Charter and Agenda 21. The principles underlying sustainable development insist on development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Although in need of clearer definition, these widely discussed principles call for tight links between environment and development, for institutions that integrate environmental and economic decision making, for international cooperation on global issues, and for major efforts toward more sustainable paths of population growth and energy and resource use. Whether such principles can come to have the acceptance, weight, and specific implication needed to steer climate negotiations safely away from stale North-South rhetorical exercises remains to be seen, but they provide a promising possibility.

**Recommendation: Consider directing negotiating energies toward a small-scale, expanding agreement.**

The complexities of a universal process may still threaten endless delay or impasse. Suppose, however, that a smaller group of industrialized states with potent domestic interests keenly interested in anti-greenhouse gas measures were to negotiate among themselves a reduction regime that included timetables and targets, either voluntary or mandatory. Presumably the core group would include major contributors to the greenhouse problem in which there was substantial and urgent domestic sentiment for action. A natural starting core would be the twelve nations of the EC, the six member states of the European Free Trade Association, plus Japan, Australia, and Canada—all of which by 1992 had unilaterally or collectively adopted greenhouse gas stabilization or reduction targets. With the advent of the Clinton-Gore administration, the prospects for more active U.S. participation, support, and leadership certainly improve.

Agreement among such a group would likely prove far easier to achieve than would a global accord because of the fewer number of states involved as well as the obvious issues at the 1992 Earth Summit. For example, Canada, Australia, and the United States initially resisted using the Kyoto Protocol's mechanism to deal with their climate change issues. The difficulty is in concluding.

To be sure, there would have to be a shift in the thinking of actors such as China, India, and other developing countries. Their development process has parallels to those in the more industrially advanced ones, and their attitudes to the Earth Charter have only just begun to be considered.

First, the core group could set a scheme similar to that which has been traditionally used when nations of the EC, the six member states of the European Free Trade Association, plus Japan, Australia, and Canada—all of which by 1992 had unilaterally or collectively adopted greenhouse gas stabilization or reduction targets. With the advent of the Clinton-Gore administration, the prospects for more active U.S. participation, support, and leadership certainly improve.
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of more efficient electrical generating equipment). Such customized small-group negotiations with China, India, Brazil, and others should be more conducive to environmentally desirable results than would generalized North-South clashes in a full-scale UN conference.

The fourth option is considerably more ambitious and contentious. As the group of adherents to the smaller convention grew in size, it might choose to impose a tax on products imported into member countries from nonadherents, perhaps based on the direct or indirect carbon content of those products. While this tax would elicit an extreme reaction from GATT, the carrot (providing individually tailored negotiated incentives for nonadherents to join) and the stick (raising such a “carbon fence” around groups resistant to anti-greenhouse gas measures) might together lead to a much larger number of countries jointly taking measures to prevent climate change. Evidently, a price to be faced, deliberated, and accepted by the smaller group would be a substantial number of free-riding countries. With a large enough group of adherents, however, the actions of a smaller group could still be preferable to no agreement at all.

Ironically, although a number of developing countries have joined the Montreal Protocol, it is quite possible to interpret this accord, after the fact, as strongly analogous to the smaller scale convention proposed above. While carried out in the context of a widely accepted framework (the Vienna Convention), the relatively small number of key CFC-producing countries ultimately acceded to the CFC reductions in the Montreal Protocol. However, important developing countries (India, China, and Brazil) did not agree until 1990. India, for example, demanded $2 billion—a number related to its cost of using more ozone-friendly technology in the future—as its price to join the 1987 protocol. In 1990 a number of developed nations agreed to provide such assistance up to $240 million. This amount proved sufficiently attractive to representatives of states such as India and China that they indicated their willingness to join. However, as a result of the smaller scale Montreal Protocol, extremely significant ozone-protection measures are now underway even before the full resolution of important issues concerning financial aid and technology transfer to the developing world has taken place.

CONCLUSION

The problems that negotiators will face in the next phases of a regime to control global warming illustrate the powerful barriers to agreement, versions of which apply in a large number of contexts. This chapter has
sought to clarify the nature of these barriers and suggest constructive responses to them. Environmental diplomats have largely taken negative lessons from the LOS negotiations and positive ones from the CFC accords in envisioning a framework-protocol process for global warming. However, gaining significant future action to curb greenhouse gas emissions will be a far more difficult task than either dealing with ocean resources or the ozone layer. Despite the apparent appeal of the step-by-step approach, a review of the evolution of the LOS process from separate miniconventions into a comprehensive treaty illustrates the powerful forces that will likely operate on a climate change negotiation that seeks to combine protocols and to collapse a many-stage process into a more unified effort. The trick will be to find smaller, more manageable packages that embody enough mutual gains to attract key players.

The power of the coalitions that will arise to block greenhouse action—not merely for reasons of economic interest, but also for reasons of science, ideology, or opportunism—must be taken into account in the design of an effective negotiating process. Preventing and overcoming these forces could be aided by a sophisticated selection and sequencing of protocols, as well as by such innovative devices as ratchet mechanisms, negotiated baselines, and voluntary actions short of negotiated targets. Even if these hazards are avoided, the possibility of a North-South impasse looms. A number of actions could mitigate it, however, including workshops, negotiation process choices, creative linkages, and advancement of new ideological templates. If these measures are unsuccessful, attention may shift to a smaller scale, expanding convention that could use incentives and penalties to later bring other states into its fold. Good candidates to start this process include those countries that have unilaterally committed to greenhouse emissions targets.

Advocates need to keep in mind the distinction between measuring success by the number of diplomatic instruments ratified versus actual policy shifts over time. The obvious focus of energy is on the former. Given the sheer scale of the factors contributing to the climate problem, however, negotiated results will at best be one of many factors that accumulate to change widespread and deep-seated behaviors that generate greenhouse gases. Thus, rather than conceptualizing negotiations primarily as potential direct producers of greenhouse restrictions, this chapter has argued that negotiations themselves should also be understood as a potential contributor to broader scale awareness, scientific development, and consensus. The latter effect may be far more powerful than the former. A climate-negotiating process and its outcome should be measured by the extent to which they stimulate public visibility and education, mobilize
nongovernmental action, and foster widespread involvement of scientists in the development of a fuller consensus. The opposite of success in these terms would be a process and result that were diplomatically correct but which proceeded invisibly and exclusively. One scarcely looks forward to the international equivalent of the U.S. Gramm-Rudman antideficit targets and timetables.

In summary, to an advocate of a new greenhouse gas control regime, the fundamental negotiating task is to craft and sustain a meaningful winning coalition of countries that will back such a regime over time. Two powerful barriers to this fundamental task are (1) that each member of the coalition fails to see enough gain in the regime, relative to the alternatives, to adhere and (2) that potential and actual blocking coalitions of interests opposed to the regime are neither prevented from forming, acceptably accommodated, or otherwise neutralized. The recommendations for negotiation design developed in this chapter suggest that, over time, as the science and politics warrant, there are many ways to surmount these daunting barriers for climate negotiations, and, one hopes, in other areas.

ACKNOWLEDGMENTS

This chapter draws heavily, with permission, from my chapter in a volume edited by Irving Mintzer (in Negotiating Climate Change: The Inside Story of the Rio Convention, Cambridge: Cambridge University Press, 1994, 277–320). This chapter contains an extensive set of background and supporting citations that are incorporated by reference into the present chapter. I am indebted to the same people and organizations acknowledged therein, especially to the Negotiation Roundtable at Harvard and the Salzburg Environmental Initiative, as well as to Kenneth Arrow's subsequent helpful suggestions on a related paper. Support of the Office of Policy and Evaluation of the U.S. EPA, the Charles Stewart Mott Foundation, and the Stockholm Environmental Institute is gratefully acknowledged.

NOTES

1. Negotiation analysis is a prescriptive approach to negotiating situations that draws on game-theoretic concepts but does not presuppose
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2. In the climate case, blocking coalitions may include nonjoiners and free riders. However, peculiarities in the rules of conference diplomacy may actually allow such nonjoiners to block agreements that are widely desired. For traditional discussions of these coalitional concepts, see R. Duncan Luce and Howard Raiffa, Games and Decisions (New York: Wiley, 1957); or William Riker, The Theory of Political Coalitions (New Haven: Yale University Press, 1962). Here, winning coalitions are only defined with respect to a set of policy measures from the point of view of a particular actor or actors; such coalitions consist of sufficient numbers of adherents to render the policy effective (again from the point of view of the specific actor or actors). Blocking coalitions are those opposing interests that could prevent a winning coalition from coming into existence or being sustained. The term “actor” should be contextually obvious and can include states, domestic interests, and transnational groupings of either as appropriate. Although the necessary conditions described above are extremely important, sufficient conditions do not in general exist for an agreement to be reached and an impasse or escalation avoided (see Lax and Sebenius, The Manager as Negotiator).

3. Climate change was only one of the many subjects taken up at the 1992 conference, which was timed to take place on the twentieth anniversary of the initial UN environmental conference held in Stockholm. The vast agenda of the 1992 conference also included other atmospheric issues (ozone depletion, transboundary air pollution), land resource issues (desertification, deforestation, and drought), biodiversity, biotechnology, the ocean environment, freshwater resources, and hazardous waste. UN General Assembly, “United Nations Conference on Environment and Development” (General Assembly Resolution 228, 44 UN GAOR Supp. [No. 49] at 300, UN Doc. A/44/49, 1989).

4. For a summary of the unilateral and small-group greenhouse gas reduction and stabilization targets adopted worldwide, see Global


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CFCs: Ecological Epistemic Communities and the Protection of Stratospheric Ozone" (paper presented at Conference on Knowledge, Interests, and International Policy Coordination, Wellesley College, 1989).

9. There were, of course, limitations on various activities (for example, coastal state seaward territorial claims and marine scientific research) negotiated in the LOS context. Not surprisingly, these were among the most difficult aspects of the conference.


23. "Japan Backing Down from Large-Scale Global Warming Reduction


26. An unlikely but illustrative U.S. domestic parallel involving the creation of an unusual and potent blocking coalition may be found in Michael Pertschuk’s stewardship of the formerly sleepy Federal Trade Commission (FTC) in the late 1970s. The FTC had recently launched a number of rule-making efforts that directly affected a range of small business interests in the United States, such as funeral homes, used-car dealers, and optometrists. Furthermore, the FTC decided to take on the issue of children’s television advertising, which not only threatened major media advertising revenues, but also smacked of First Amendment restrictions. In effect, having energized and unified an enormous coalition of large and small business and media companies—many of whom had been bitter rivals before—the FTC engendered a hail of protest, had its budget and authority slashed, and was even shut down for a while. In part, Pertschuk’s unintended legacy was a far more unified and politically effective business community. See Philip B. Heymann, *The Politics of Public Management* (New Haven: Yale University Press, 1987).


32. Ibid., 41.


39. At present, the OECD countries account for approximately 45 percent of carbon emissions. With the addition of the former Soviet Union and Eastern Europe, the total would rise to 71 percent. See Manne and Richels, “The Costs,” 15.


41. The experience of the Long-Range Transboundary Air Pollution Convention, in which groups of expanding size acceded to the later sulfur and nitrogen oxides protocols, is also generally in accord with this small-scale approach. For a summary, see C. Ian Jackson, “A Tenth Anniversary Review of the ECE Convention on Long-Range Transboundary Air Pollution,” *International Environmental Affairs* 2, no. 3 (summer 1990): 217–226.